Notes.

The first conversazione of the Royal Society this year will be held in the rooms of the society at Burlington House on Wednesday evening next, May 12.

A summer meeting of the Institution of Naval Architects will be held in Liverpool on July 6–8. Meetings for the reading of papers will be held, and arrangements will be made to visit some of the principal shipbuilding and other works in Liverpool and its vicinity.

Sir Henry A. Miers, Vice-Chancellor of the Victoria University of Manchester, has been re-elected president of the Manchester Literary and Philosophical Society for the session 1920–21. Dr. H. F. Coward and Prof. C. A. Edwards have been elected honorary secretaries.

A public meeting, arranged by the National Union of Scientific Workers, will be held on Tuesday next, May 11, at 8.30 p.m., at the Imperial College Union, Prince Consort Road, South Kensington, for the discussion of "The Economic Position of Scientific Workers." The chairman will be Dr. H. M. Atkinson, and the subject will be introduced by Prof. J. B. Farmer and Dr. J. W. Evans.

Sir Henry Birchenough has been appointed chairman of the British Dyes Corporation in succession to Lord Moulton, whose resignation is announced. Sir Henry was chairman of the Royal Commission on Paper, 1917; of the Committee on Cotton-growing in the Empire, 1917; and of the Advisory Council to the Ministry of Reconstruction, 1918.

A committee of fellows of the Royal Society and members of the University of Cambridge has been formed for the purpose of collecting funds for a memorial to be erected in Westminster Abbey to the late Lord Rayleigh in recognition of his eminent services to science. Lord Rayleigh was both president of the Royal Society and Chancellor of the University, and an appeal has been issued by the society and the University. It is thought, however, that there may be some men of science unconnected with either of these bodies who may wish to show their appreciation of Lord Rayleigh's work. Donations may be sent to the hon. treasurers of the fund, Sir Richard Glazebrook and Sir Arthur Schuster, at 63 Grange Road, Cambridge.

The council of the Institution of Civil Engineers has made the following awards for papers read and discussed during the session 1919–20:—Telford gold medals and Telford premiums to Mr. David Lyell, Mr. J. K. Robertson, and Major-Gen. Sir Gerard M. Heath; a George Stephenson gold medal and a Telford premium to Mr. Maurice F. Wilson; a Watt gold medal and a Telford premium to Mr. P. M. Crosthwaite; and Telford premiums to Major E. O. Henrici, Sir Francis J. E. Spring, Mr. F. O. Stanford, Mr. J. Mitchell, Mr. J. W. Sandeman, and Dr. A. R. Fulton.

Lt.-Col. Sir Leonard Rogers, I.M.S., has recently returned from India on a year's leave on medical certificate, on the expiry of which he will have only a short period of Indian service remaining before being retired under the age rules. As he has completed the organisation of the Calcutta School of Tropical Medicine for opening next autumn with a full staff, he does not propose to return to India, but to devote himself to continuing his researches on the treatment of tuberculosis, which have already yielded some promising results in India, and have arisen out of his successful method of treating leprosy by injections of soluble preparations of the unsaturated fatty acids of various oils.

At the annual general meeting of the Marine Biological Association, held in London on April 28, Sir E. Ray Lankester was re-elected president of the association, and Sir Arthur Shipley chairman of council. The Rt. Hon. Sir Arthur Griffith-Boscawen was added to the list of vice-presidents, and Messrs. T. H. Riches and Julian S. Huxley became members of council for the first time. The council reported that donations amounting to 1770*l.* had been promised towards the erection of new laboratories and the equipment of a department of general physiology. Scientific work at Plymouth during the year had been specially directed to a comparison of the condition of the trawling grounds with that which had been observed before the war, to the continued study of the distribution of post-larval and young adult stages of fishes and the food eaten by fishes when in these stages, and to observations on the invertebrate fauna, particularly on the rate of growth of various organisms.

That the Plumage Bill was "talked out" in the House of Commons last Friday is probably due to the fact that it did not come before the House until the day was far spent. As a private members' Bill, its chances of success, should the debate be resumed on some future Friday, are not great. The Hon. E. S. Montagu spoke briefly, and to the point, in its favour, remarking that the Government was extremely anxious to see the Bill passed into law. He did not believe, he said, that the passing of the measure would destroy any legitimate trade. Lord Aberdeen's Bill, which is on its way to the Commons, affords yet another chance, though a slender one, for necessary legislative action. It does not seem to be realised, even by zoologists, that the matter is one of real urgency, not merely for ornithologists, or for those who desire to protect birds for their own sake, but for all who are concerned with problems of economic zoology and pure science. It is therefore devoutly to be hoped that this matter will at once be taken up by men of science in all seriousness. Their considered opinion is necessary if any Bill restricting the import of plumage of wild birds is to become law before extermination has set its seal upon a number of species which are well within the "danger-zone."

The need has long been felt for a corporate body analogous to the Institute of Chemistry which would represent the profession and strengthen the position of workers engaged in physics, and would also form a bond between the various societies interested. The

Institute of Physics has been founded for this purpose by the co-operation in the first instance of the Faraday Society, the Optical Society, and the Physical Society of London; and the first board is constituted from representatives appointed by the councils of these societies. It is hoped that in the course of time other societies will associate themselves with the institute. There will be three classes of members: Ordinary members, associates (A.Inst.P.), and fellows (F.Inst.P.). Only the two latter classes, membership of which will require full professional qualifications, will be corporate members. The institute has already received promises of support from leading physicists, and the initial expenses are covered by a guarantee fund amounting to more than 1200*l.* The first president of the institute is Sir Richard Glazebrook, Sir Robert Hadfield is treasurer, and Prof. A. W. Porter honorary secretary. The other members of the board are:—Dr. H. S. Allen, Inst.-Commander T. Y. Baker, R.N., Prof. F. J. Cheshire, Dr. R. S. Clay, Mr. W. R. Cooper, Prof. W. H. Eccles, Major E. O. Henrici, Dr. C. H. Lees, Mr. C. C. Paterson, Major C. E. S. Phillips, Dr. E. H. Rayner, Mr. T. Smith, and Mr. R. S. Whipple. Mr. F. S. Spiers has been appointed secretary to the institute, and further particulars and forms of application for membership may be obtained from him at 10 Essex Street, Strand, W.C.2.

During the last ten years important research work on the corrosion of metals, and particularly on condenser tubes, has been carried on by the Corrosion Research Committee, which was founded under the auspices of the Institute of Metals. Very considerable progress in the study of this difficult subject has been made by the investigators acting under the direction of the committee, and the five reports which have been issued contain most valuable information, both as to the factors which influence corrosion and as to the methods of preventing corrosion, especially in the case of marine condenser tubes. The financial support of the investigations has been provided partly by the Institute of Metals and partly by the makers of tubes and of condensers. More recently a grant has been received from the Department of Scientific and Industrial Research. The cost of the investigations is, however, considerable, and the committee now makes an appeal for further funds from the users of tubes and condensers, who are equally interested in the question with the manufacturers. The continuance of a Government grant is contingent on a sufficient sum being provided by persons interested in the research. The persons affected by the work include shipbuilders and shipowners and also the insurers of ships, and it is hoped that a sum of something like 1000*l.* per annum can be raised from this source. Particulars of the work may be obtained from the secretary of the Institute of Metals, 36 Victoria Street, Westminster, London.

At the annual general meeting of the Institution of Civil Engineers held on Tuesday, April 27, the result of the ballot for the election of officers for the year 1920–21 was declared as follows:—*President:* Mr. J. A. Brodie. *Vice-Presidents:* Mr. W. B. Worthington, Dr. W. H. Maw, Mr. C. L. Morgan, and Mr. Basil Mott. *Other Members of Council:* Mr. E. A. S. Bell, Dr. C. C. Carpenter, Col. R. E. B. Crompton, Mr. M. Deacon, Sir Archibald Denny, Bart., Sir William H. Ellis, Mr. A. Gordon, Mr. W. W. Grierson, Sir Robert A. Hadfield, Bart., Sir Brodie H. Henderson, Mr. E. P. Hill, Mr. G. W. Humphreys, Mr. Summers Hunter, Mr. H. G. Kelley, Mr. C. R. S. Kirkpatrick, Mr. J. Marchbanks, Mr. H. H. G. Mitchell, Sir Henry J. Oram, Mr. F. Palmer, Capt. H. Riall Sankey, Sir John F. C. Snell, Mr. W. A. P. Tait, Mr. A. M. Tippett, Mr. E. F. C. Trench, Prof. W. H. Warren, and Sir Alfred F. Yarrow, Bart. This council will take office on the first Tuesday in November next.

The annual meeting of the members of the Royal Institution was held on May 1, Sir James Crichton Browne, treasurer and vice-president, in the chair. The annual report of the Committees of Visitors for the year 1919, testifying to the continued prosperity and efficient management of the institution, was read and adopted, and the report of the Davy Faraday Research Laboratory Committee was also read. Sixty-four new members were elected during the year, and sixty-two lectures and nineteen evening discourses were delivered. The following gentlemen were unanimously elected as officers for the ensuing year:—*President:* The Duke of Northumberland. *Treasurer:* Sir James Crichton Browne. *Secretary:* Col. E. H. Hills. *Managers:* Dr. Horace T. Brown, Mr. J. H. Balfour Browne, Mr. J. Y. Buchanan, Mr. Burdett-Coutts, Sir James J. Dobbie, Dr. J. Dundas Grant, Dr. Donald W. C. Hood, the Right Hon. Earl Iveagh, Mr. H. R. Kemps, Sir Ernest Moon, the Hon. Sir Charles Parsons, Sir James Reid, Bart., Sir Ernest Rutherford, the Right Hon. C. Scott-Dickson, and Sir Henry Wood. *Visitors:* Sir Hugh Bell, Bart., Sir William H. Bennett, Mr. W. R. Bousfield, Mr. J. G. Bristow, Dr. Frank Clowes, Mr. Montague Ellis, Mr. W. E. Lawson Johnston, Mr. J. R. Leeson, Mr. T. B. Lightfoot, Mr. F. K. McClean, Mr. W. S. Norman, Mr. H. M. Ross, Mr. J. Shaw, Mr. T. H. Sowerby, and Sir Almroth Wright.

At the anniversary dinner of the Royal Academy of Arts, held on May 1, the president, Sir Aston Webb, in proposing the toast of "Science," remarked that to science and scientific research in medicine and surgery they were indebted for the marvellous record of freedom from disease and saving of life which was one of the most wonderful and gratifying chapters in the war. To the physicist and engineer were due much of the work done in connection with aircraft, tanks, submarines, and guns, the wonderful work done in sound-ranging for submarines, the location of aircraft and guns by sound; but it was impossible to give any list of all that was done, and still less the names of the men of science who thus helped their country in its time of urgent need. The president coupled the toast with the name of Sir Joseph Thomson, who, in replying, said that the qualities of mind that were called into play by the artist were in many respects identical with those used by the man of science. Imagination and observation were vital to scientific discovery. The artist and the man of science were concerned with the same subject—the study of Nature under various aspects. While it was vital for the progress of this country that the application of science to industry should receive every encouragement and assistance, yet they ought not to neglect those who, forsaking the trade routes of the great liners, steered their little ships to uncharted seas to bring back to us the golden fleece.

Sir Jagadis Bose gave a very interesting lecture at the University of London Club on Thursday evening, April 29, on his well-known experiments on movements in plants. He has applied the methods of instrumental physics to the study of tropic plant movements, and, beginning with methods which magnified the growth one hundred times, has finally, with his high magnification crescograph, reached magnifications of more than ten million. This instrument uses the principle of a fine magnetised lever affecting a magnetic needle and so demonstrating growth by the movement of an attached mirror. By this method very delicate growth responses of the plant could be shown, and its relative sensitivity under different conditions compared. One of the lecturer's most general conclusions was that indirect stimulus causes an increase of growth, while direct stimulus of a plant organ causes a decrease of growth or contraction. In this way positive, negative, and neutral responses to gravitation or light on the part of any organ were explained as the result of various combinations of response to direct and indirect stimulus. Sir Jagadis Bose's crescograph is so remarkably sensitive that doubt was recently expressed as to the reality of its indications as regards plant growth; and the suggestion was made that the effects shown by it were due to physical changes. A demonstration at University College, London, on April 23, has, however, led Lord Rayleigh and Profs. Bayliss, V. H. Blackman, A. J. Clark, W. C. Clinton, and F. G. Donnan to state, in the *Times* of May 4: "We are satisfied that the growth of plant tissues is correctly recorded by this instrument and at a magnification of from one to ten million times." Sir W. H. Bragg and Prof. F. W. Oliver, who have seen similar demonstrations elsewhere, give like testimony that the crescograph shows actual response of living plant tissues to stimulus.

Further news from Capt. Roald Amundsen confirms the belief expressed in Nature of April 22 and 29 that he had not abandoned his North Polar journey. His object in calling at Nome, Alaska, in July is evidently to secure more supplies, add to his crew, and to receive mails. A long despatch published in the *Times* of May 1 gives some details of the fortunes of the expedition and explains the change in plans. The *Maud* left her winter quarters in the Nordenskjöld archipelago west of Cape Chelyuskin as late as September 12, 1919. It was necessary to blast a channel through about one and a half miles of solid floe six to nine feet thick. Until the Taimir peninsula was cleared pack offered some obstruction, but to the eastward the sea proved to be fairly open. The lateness of the season was in Amundsen's favour in this part of his journey, and he was no doubt trusting to former accounts of open water in September. The *Maud* sailed east through Laptev Strait between the New Siberia Islands and the mainland and then turned north-east for Jeannette Island, but was stopped by tight pack in lat. 73° N. Amundsen made fast to the floes, intending to begin his drift, but on finding that the pack was nearing south he had to abandon his attempt. He decided to winter on the coast of Siberia, and after a passage rendered dangerous by ice and darkness reached Aion Island, Chaun Bay. One member of the expedition spent the winter with the Chukchee, who inhabit the interior of this part of north-eastern Siberia, in order to study their customs. Two men sent overland to the small trading village of Nizhne-Kolimsk with despatches for home turned back at Sukharnoe, a village at the mouth of the Kolima, with news that all communications with Europe were cut off. Amundsen hopes to reach Nome in July or August, and, if not too late in the season, to return north and enter the ice about Wrangel Island for his five years' drift.

With reference to the note in Nature of April 15, p. 210, upon the laboratory of applied psychology connected with a well-known institute of mind-training, the director informs us that the fees charged are very considerably less than the cost of the tests performed or the scientific advice given, and that the laboratory is projecting the publication of research papers giving details of the work done, so that the world of science in general will be able to examine the methods adopted and the results obtained.

With the return to peace the increased cost of production has made it necessary to devise a new scheme for the publication of the "Victoria History of the Counties of England." Hitherto no order for fewer than ten volumes relating to a single county has been accepted, but it has been found by experience that there is a considerable demand for separate articles on special subjects. It has therefore been decided to issue the History, both that portion which has already been published and the remainder which is in preparation, in separate parts. Each part will include a single hundred, wapentake, or borough, and persons interested in the history, archæology, or economics of a special area will be able to procure what they require within a single cover. The new arrangements seem well adapted to popularise a work which has already taken the rank of a standard authority on the subjects with which it deals.

Sir Thomas Muir, the well-known mathematician, and until lately Superintendent-General of Education in Cape Colony, has recently made a splendid gift to the South African Public Library, Cape Town. It consists of about 2500 books and pamphlets, collected by the donor in the course of many years, and it includes a number of serials, sets of which are now almost unprocurable. As might be expected, there is an unusually complete group of works on determinants and allied topics. The gift is of special interest because it is made to a *public* library. Several of our college and university libraries have been enriched by similar donations (*e.g.* there is the Graves collection at University College, London). The time has come when we may hope that the reference departments of our rate-supported town libraries will be strengthened in a similar way. Of course, mathematics is not the only subject deserving attention; natural science, history, archæology, economics, etc., all have a claim to be considered. Anyone who cares to examine the present record of public research libraries will be convinced that such gifts as that of Sir Thomas Muir are not likely to be wasted.

THE meeting of the Physical Society of London on March 26 took the form of a discussion on Einstein's theory of relativity. Prof. A. S. Eddington opened with an explanatory lecture. Prof. A. O. Rankine described experiments undertaken in collaboration with Dr. Silberstein on the influence of a gravitational field on the velocity of light polarised in a plane parallel to the field; the results of the experiment were in accord with the theory. Sir Joseph Larmor contributed a paper in the course of which he remarked that "the unresolvable essence of relativity appears to be that we cannot get on without *some foundation* to which phenomena are referred, and with respect to which they are ordered to the degree that is necessary for our reasonings." Reference was made also to the close relation between the theory and the fundamental principle of least action. That principle furnishes the most concise and elegant means of comprehending Einstein's theory. Here Helmholtz was a pioneer, not only in his grasp of physical principles, but also in his appreciation of the true nature of geometry. The searching question was asked: "How is it that astronomers since Newton's time have persisted in one special and very precise illusion about the distribution of gravitation, whereas really an unlimited choice is open?" Several speakers raised questions about the interpretation of the Michelson-Morley experiment, indicating that the explanations offered both by Lorentz and by Einstein still remain unconvincing to many physicists.

THERE are many chemists, and doubtless other scientific workers, who, busy with their everyday duties, have not been able to follow closely the progress made during the last few years in the study of atomic structure, and would welcome a connected survey of recent experiments and present views. Hence attention may be directed to an address by Prof. A. Berthoud on "The Structure of Atoms," a translation of which appears in the *Chemical News* of April 9 and 16. This gives, in simple language, a very readable account of the matter. It shows the connections which have been traced between the phenomena of radio-activity, isotopy, atomic numbers, Moseley's law, Bohr's theory, and the spectra of the elements; and it indicates to what extent the fundamental characters of atomic structure may now be regarded as known, however much of detail may still be waiting for the sagacity of the investigator to fill in.

MESSRS. ILFORD, LTD., in issuing a second edition of their well-known booklet on "Panchromatism," have taken the opportunity of revising it and making some important additions. The largest of the new sections explains the nature of three-colour photography, in which is demonstrated the fact that in three-colour half-tone prints, granting the use of satisfactory inks, the result is the same whether the dots are side by side or superposed. The variability of so-called "white light" is treated of, the table of the multiplying factors of colour-filters is greatly extended, and a considerable number of new filters are described. The most novel and interesting of these last are the "photographic-vision" filters, which have transmissions that correspond with the sensitiveness of an orthochromatic or panchromatic plate, and therefore, when looked through, give the object or landscape the appearance that it will have when photographed on the plate that it matches. The effect of any colour-filter on the photograph is seen at once by putting the filter together with the "photographic-vision" filter in front of the eye. The price of the booklet is 6*d*., or post free 9*d*.

MESSRS. A. GALLENKAMP AND CO., LTD., have forwarded us a copy of their list (No. 72) of graduated instruments for volumetric analysis. These include burettes, pipettes, graduated cylinders, and various kinds of measuring flasks for use in the chemical and physical laboratory; we do not, however, notice pyknometers in the list. The instruments are made in three qualities, depending upon the degree of accuracy required. Those intended for research and special work (Grade A) are graduated according to the regulations laid down by the International Congress of 1909. Apparatus of the next quality (Grade B) is intended for specially accurate commercial analysis; and that in Grade C is suitable for ordinary technical determinations and general school-work. It is satisfactory to know that our makers of scientific glassware are endeavouring to meet the requirements of all users, including those of research workers. Whilst writing on this subject we may note that, from a report appearing in the Journal of the Society of Glass Technologists (December, 1919), there is a movement in Germany to restrict and standardise the shapes and sizes of glass vessels such as beakers, flasks, retorts, cylinders, and crystallising dishes in order to eliminate unnecessary diversity and facilitate replacement. The proposed standard dimensions are quoted at length.

MESSRS. H. K. LEWIS AND CO., LTD., 136 Gower Street, W.C.1, have just issued a list (dated April) of new books and new editions added to their medical and scientific circulating library during January, February, and March of the present year. Being very comprehensive and carefully classified, it should be useful to all who wish to keep abreast of current scientific literature. Copies can be obtained free of charge upon application to the publishers.